AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): A method for the production of a monolithic multilayer actuator comprising a piezoceramic or electrostrictive material, with the actuator being formed as a stack arrangement in a quasi mechanical series connection of a plurality of piezoplates by sintering of green foils, existing inner electrodes in the plate stack being routed to at least two opposite outer surfaces of the stack, where they are connected in parallel by a basic metallic coating as well as an external contact of respective electrode groups,

wherein specific microdisturbances are incorporated in the actuator structure along the longitudinal axis of the stack essentially parallel and spaced ~~to~~ from the inner electrodes in the area of the at least two opposite outer surfaces to which the inner electrodes known per se are brought out, which at the earliest during polarisation of the actuator are subject to a pregiven, limited, stress-reducing growth into the interior of the actuator;

wherein the microdisturbances permit transmission of pressure, but not tensile stress, between the piezoplates; and

wherein additionally ~~the basic metallic coating and/or~~ the external contact is formed elongation-resistant or elastic at least in the area of the microdisturbances.

Claim 2 (Currently Amended): The method according to Claim 1, wherein

at the microdisturbances ~~prevent locally limited that the~~ green foils are not sintered together.

Claim 3 (Previously Presented): The method according to Claim 2, wherein

a layer or quantity of an organic binder is applied during build-up of the stack in the area of the microdisturbances, with up to 50% by volume of organic particles with a diameter ≤ 200 nm which during the sintering process burn off nearly completely.

Claim 4 (Previously Presented): The method according to Claim 3, wherein

the layer is applied by means of screen printing, with this layer being compacted prior to sintering in such a manner that the ceramic particles embedded in the green foils contact each other only partially or not at all in order to explicitly prevent a complete or partial sintering together.

Claim 5 (Previously Presented): The method according to Claim 2, wherein

microdisturbances are formed by a quantity of inorganic filler particles with a diameter of ≤ 1 μm which do not react with the piezoelectric material of the stack, with these filler particles being added to the binder.

Claim 6 (Previously Presented): The method according to Claim 2, wherein

the microdisturbances are induced by incipient notches, which are generated either in the green or in the sintered condition, without, however, reducing the load bearing cross-sectional area of the actuator stack.

Claim 7 (Previously Presented): The method according to Claim 1, wherein

the external contact is prepared with the knowledge of the position of the incorporated or intended microdisturbances, with the external contact comprising a plane bending articulated electrode which is punctually or with portions in electrical connection with the basic metallic coating at least in the area of the microdisturbances.

Claim 8 (Previously Presented): The method according to Claim 7, wherein

the bending electrode consists of a soldered copper/beryllium strip and the strip comprises sections in the shape of open ellipses, with main axis of the respective open ellipsis extending in the area of one of the microdisturbances.

Claim 9 (Previously Presented): The method according to Claim 7, wherein

the bending electrode is designed as meander or double meander electrode, with the connecting portions of the meander extending in the area of the microdisturbances.

Claim 10 (Previously Presented): The method according to Claim 7, wherein

soldering portions or soldering pads are provided on the bending electrodes for further wiring.

Claim 11 (Previously Presented): The method according to Claim 1, wherein

electrode-free passive end layers as force coupling surfaces are applied on the stack arrangement.

Claim 12 (Previously Presented): The method according to Claim 11, wherein the distance of the first microdisturbance to the passive end layer is selected to equal the total or half the distance of the remaining microdisturbances distributed over the longitudinal axis.

Claims 13-24 (Canceled)